

years he regarded the castor-oil plant, *Ricinus communis*, as a genuine case of parthenogenesis, the past year's experience still leaves the matter open to doubt. If it be true that the female flowers of *Cycas revoluta* can generate spermatozoids in their ovaries, and thus self-fertilize the ova, the occurrence must be rare. In this vicinity old specimens of this plant are frequently seed-bearing *apparently*, but in every case examined by the author they were found to have only empty capsules.

It seems to the author that the subject of parthenogenesis is by no means thoroughly "threshed out," and the object of this paper is to encourage continued observations.—*Proc. Acad. Nat. Sci. Philad.* 1899, pp. 97-99.

Relations of the Land-Molluscan Fauna of South America.

At a meeting of the Academy of Natural Sciences of Philadelphia on the 23rd May, 1899, Mr. H. A. Pilsbry spoke of the extrinsic relations of the land-molluscan fauna of South America, recounting and commenting upon the various theories advanced to account for the relations existing between the South-American, African, and Australo-Zealandic faunas. The evidence of former Austral land connecting South America with Australasia, derived from a study of the Bulimulidæ, the Macroogona, &c., was detailed. The speaker gave his reasons for preferring the hypothesis of a former extension of Antarctic land to that of a South-Pacific continent, as advocated by Prof. Hutton* and some others. He claimed that the present fauna of Southern Polynesia was not consistent with Hutton's supposition that these islands had been submerged, and thus their fauna destroyed, on the sinking of the supposed Pacific continent entirely below the sea, the present "islands being merely outgrowths on its submerged back." Some Polynesian groups, such as *Partula*, belong to very primitive, and therefore ancient, groups, unknown in any other area, and indicating great antiquity for the Polynesian archipelagos†. Neither is the present fauna of Polynesia consistent with the hypothesis that these islands are unsubmerged remnants of a Pacific continent.

The enigmatic relations of the freshwater fishes, snails, and the terrestrial Streptaxidæ of tropical South America with the African fauna were discussed.

The speaker considered the neotropical region of Wallace to be composite, the Antillean and Southern Mexican area representing a tract independent from North and South America in Mesozoic and perhaps earlier time, on which the faunal problems had been independently worked out.—*Proc. Acad. Nat. Sci. Philad.* 1899, p. 226.

* See *Proc. Linn. Soc. New South Wales*, 1896, p. 36, for an able paper advocating Prof. Hutton's views, an abstract of which appeared in the 'Annals' for July 1896, p. 120.

† *Partula*, like the allied *Achatinella* of the Hawaiian group, has a bottle-shaped kidney with direct, not reflexed, ureter, as in *Limnæa*. These forms have no relations with the Bulimulidæ and Achatinidæ, with which conchologists associate them, but lie at the base of the terrestrial pulmonate tree.